

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of transmitting packet-switched data between a transmitter and a receiver in a radio system, in which method the connection between the transmitter and the receiver ~~comprises~~ includes at least two logical channels, and that one logical channel is used for transmitting delay-critical information, and that the information to be transmitted between the transmitter and the receiver is located in given transmission units, the method comprising: ~~and that~~

employing a method of error protection ~~is employed~~ in the transmission of the transmission units, and

~~characterized by~~ employing a different method of error protection when transmitting data and delay-critical information.

2. (Currently Amended) A method as claimed in claim 1, ~~characterized in that,~~ in signal transmission, further comprising, as part of signal transmission:

channel-coding the transmission unit ~~comprising~~ including data ~~is channel-coded,~~
storing the transmission unit ~~is stored~~ in memory,
~~after which performing a [[the]] first adaptation of the transmission rate is performed,~~
~~after which~~ multiplexing the transmission units ~~comprising~~ including data are
~~multiplexed~~ with the transmission units ~~comprising~~ including delay-critical information, and
performing a second adaptation of the transmission rate and interleaving for which the
multiplexed transmission units ~~the second adaptation of the transmission rate and interleaving~~
~~are performed.~~

3. (Currently Amended) A method as claimed in claim 1, ~~characterized in that,~~ in signal transmission, further comprising, as part of signal transmission:

channel-coding the transmission unit ~~comprising~~ including delay-critical information
~~is channel-coded, after which the~~
performing a first adaptation of the transmission rate is performed, after which

multiplexing the transmission units comprising including delay-critical information
~~are multiplexed with the transmission units comprising including data, and~~
~~for which multiplexed performing a second adaptation of the transmission rate and~~
~~interleaving for the multiplexed transmission units the second adaptation of the transmission~~
~~rate and interleaving are performed.~~

4. (Currently Amended) A method as claimed in claim 1, ~~characterized in that,~~
~~in signal reception, further comprising, as part of signal reception:~~

performing [[a]] deinterleaving and the a first adaptation of the transmission rate for
~~the received transmission units are performed, after which, and~~
demultiplexing the transmission units comprising including delay-critical information
~~and the transmission units comprising including data are demultiplexed separately.~~

5. (Currently Amended) A method as claimed in claim 4, ~~characterized by~~
further comprising the receiver measuring quality of the received transmission unit on the
channels transmitting other than delay-critical information, and requesting at least one
retransmission of the transmission unit on the basis of the quality measurement, until the
quality measurement concerning the combined transmission unit composed of the originally
transmitted transmission and one or more retransmitted transmission units indicates that a
retransmission is not needed, after which the transmission unit is detected.

6. (Currently Amended) A The method as claimed in of claim 4, ~~characterized~~
~~by further comprising,~~ on the channels transmitting other than delay-critical information, in
the reception of the signal:

checking the quality of each received transmission unit independently of each other
(202);

storing the received transmission units (204);

transmitting a retransmission request formed on the basis of the quality of the
transmission units (206);

forming the combined transmission units (208);

checking the quality of each combined transmission unit (210);

repeating the preceding steps, until the quality of the combined transmission units
reaches a predetermined quality level (212); and

detecting a signal (214).

7. (Currently Amended) A method as claimed in claim 4 ~~or 5~~, ~~characterized by~~ further comprising forming an error check sum, on the basis of which the quality of the unit is checked in the reception.

8. (Currently Amended) A method as claimed in claim 4 ~~or 5~~, ~~characterized by~~ further comprising defining the quality of the received transmission unit by forming a bit error ratio of the training sequence of the transmission unit.

9. (Currently Amended) A method as claimed in claim 4 ~~or 5~~, ~~characterized by~~ further comprising determining the quality level of the combined transmission unit by comparing the average quality level of transmission units with the adaptive quality threshold.

10. (Currently Amended) A method as claimed in ~~any one of the preceding~~ claims, characterized by claim 1, wherein the delay-critical information ~~being~~ is control information.

11. (Currently Amended) A method as claimed in ~~any one of the preceding~~ claims, characterized by claim 1, wherein the delay-critical information ~~being~~ is speech information.

12. (Currently Amended) A method as claimed in ~~any one of the preceding~~ claims, characterized by claim 1, wherein the delay-critical information ~~being~~ is circuit-switched information.

13. (Currently Amended) A radio system comprising a transmitter (112, 114) and a receiver (116) arranged to transmit packet-switched data, and in which the connection (122, 124) between the transmitter and the receiver comprises at least two logical channels, and in which the transmitter and the receiver are arranged to use one logical channel for transmitting delay-critical information, and that the transmitter and the receiver are arranged to transmit the information as located in given transmission units and to employ the method of error protection in the transmission of the transmission units, ~~characterized in that~~ wherein the

transmitter and the receiver are arranged to employ a different method of error protection when transmitting data and delay-critical information.

14. (Currently Amended) A ~~The~~ system as claimed in claim 13, ~~characterized in that wherein~~ the transmitter of the system comprises a channel coder 204 arranged to code a transmission unit comprising data, a memory 206 arranged to store the transmission unit in memory, ~~the~~ a first transmission rate adapter 208, and a multiplexer 210 arranged to multiplex the transmission units ~~comprising including~~ data with the transmission units ~~comprising including~~ delay-critical information, and ~~the~~ a second transmission rate adapter 216 connected functionally to the output of the multiplexer, and an interleaver 218 connected functionally to the output of the adapter.

15. (Currently Amended) A ~~The~~ system as claimed in claim 13, ~~characterized in that wherein~~ the transmitter of the system comprises a channel coder 212 arranged to code the transmission unit ~~comprising including~~ delay-critical information[[,]] ~~and~~ a transmission rate adapter 214, [[and]] ~~wherein~~ the multiplexer 210 ~~is~~ arranged to multiplex the transmission units ~~comprising including~~ data with the transmission units comprising delay-critical information, and ~~wherein~~ the second transmission rate adapter 216 ~~is~~ connected functionally to the output of the multiplexer, and the interleaver 218 ~~is~~ connected functionally to the output of the adapter.

16. (Currently Amended) A system as claimed in claim 13, ~~characterized in that wherein~~ the receiver of the system comprises a deinterleaver 308, and a demultiplexer 312 arranged to demultiplex the transmission units ~~comprising including~~ delay-critical information and the transmission units ~~comprising including~~ data divergingly.

17. (Currently Amended) A system as claimed in claim 16, ~~characterized in that wherein~~ the receiver of the system comprises a decoder 324 arranged to measure the quality of the transmission unit received on the channels transmitting other than delay-critical information, and a control unit 326 arranged to request at least one retransmission of the transmission unit on the basis of the quality measurement, a memory 322 arranged to store the transmission unit received on the channels transmitting other than delay-critical

information, and a combiner 320 to combine the received transmission unit with the retransmitted transmission unit.

18. (New) A mobile terminal in a radio system comprising terminals and a base station, the terminal being arranged to transmit or receive packet-switched data, and in which the connection between the terminal and the base station comprises at least two logical channels, and in which the terminal is arranged to use one logical channel for transmitting or receiving delay-critical information, and to transmit or receive the information as located in given transmission units and to employ the method of error protection in the transmission or reception of the transmission units, wherein that the mobile terminal is arranged to employ a different method of error protection when transmitting or receiving data and delay-critical information.

19. (New) A base station in a radio system comprising terminals and a base station, the base station being arranged to transmit packet-switched data, and in which the connection between the terminal and the base station comprises at least two logical channels, and in which the base station is arranged to use one logical channel for transmitting delay-critical information, and to transmit the information as located in given transmission units and to employ the method of error protection in the transmission of the transmission units, wherein the base station is arranged to employ a different method of error protection when transmitting data and delay-critical information.